Abstract Submitted
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Towards PIV measurements around the breathing zones of two Thermal Breathing Manikins KALIGOTLA SRIKAR, MARK GLAUSER, Syracuse University — This work includes the transport processes in indoor environments for assessing personal exposure in connection with human health. Airflow within indoor spaces, around human bodies in ventilated spaces and within the human airways is complex due to the vast range of length and velocity scales. Breathing zones of two thermal breathing manikins seated around a table are studied in a cubicle (6 ft X 8 ft X 8 ft). To quantify the facility with the simple table geometry/ventilation system and to provide a quality Particle Image Velocimetry (PIV) flow field database for the computational validation, measurements are made in a cubicle configuration without manikins. Stereo PIV flow field measurements are acquired near the floor inlet vent, continuing up to and at various locations around and above the table. Future work will include PIV measurements utilizing two breathing manikins seated around the table to study two body interaction problems. These measurements of the airflow will be made with the manikins breathing in phase and 180 out of phase.

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